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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,294	10/19/2000	Erin Hutchinson	18989-012	4290

7590 07/03/2002

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EXAMINER

LIN, JEYUHU

ART UNIT PAPER NUMBER

3737

DATE MAILED: 07/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">09/692,294</p>	<p>Applicant(s)</p> <p align="center">HUTCHINSON ET AL.</p>	
	<p>Examiner</p> <p align="center">Jeoyuh Lin</p>	<p>Art Unit</p> <p align="center">3737</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 October 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>1</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Double Patenting***

1. Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,135,971. Although the conflicting claims are not identical, they are not patentably distinct from each other because the two claims contain similar structures, and that it is inherent in the current application that an array of ultrasonic energy elements that delivers a beam of ultrasonic energy to the body would require the combination of an electrical excitation means to allow the production of ultrasonic energy.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

-Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Nakaya et al.  
(US 4,658,176)

Nakaya teaches an ultrasonic transducer using piezoelectric composite, comprising different sized ultrasonic elements (Column 3, lines 50-67), and aperiodic spacing amongst the elements, (Column 4, lines) both serving to decrease the grating lobes.

***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Lederman et al. (US 4,180,792) teaches a ultrasonic transducer comprising different-sized transducer elements, and aperiodic spacing between the receiving and transducer elements.

-Teo (US 6,168,564 B1) teaches a steerable transducer array with asymmetrically-spaced transducers.

-Hossack et al. (US 5,706,820) teaches an ultrasonic transducer with elements of different sizes, and aperiodically-spaced kerfs which separate the elements.

-Matsui (US 5,167,231) teaches an ultrasonic probe comprising elements of various sizes.

-Seyed-Bolorforosh (US 5,465,725) teaches an ultrasonic probe comprising aperiodically spaced ultrasonic elements.

-Umemura et al. (US 4,604,543) teaches a multi-element ultrasonic transducer comprising different-sized elements with equal spacing.

-Hanafy et al. (US 5,651,365) teaches a phased-array transducer with different-sized transducer.

-Smith et al. (US 4,460,841) teaches an ultrasonic transducer shading with different-sized elements.

-Umemura et al. (US 5,158,071) teaches an ultrasonic transducer having different sized elements.

-Burckhardt et al. (US 4,242,912) teaches an ultrasonic apparatus comprising different-sized transducers.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeoyuh Lin whose telephone number is (703) 306-5990. The examiner can normally be reached on m-f, 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on (703) 308-3256. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-0758 for regular communications and (703) 308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0858.

JYL

JYL  
June 28, 2002



Marvin M. Lateef  
Supervisory Patent Examiner  
Group 3700